**APPENDIX B -** Troubleshooting

**Blank Display on the AirCycler® g2 controller.**

**Solution Check:**
1. Confirm that the furnace has power.
2. Confirm that the thermostat is operational.
3. Confirm that the furnace will call for heat from the thermostat.
4. Confirm that the fan operates with a fan only signal from the thermostat
5. Confirm that the furnace is providing 24VAC to the AirCycler® g2
6. Confirm the wiring conforms to the wiring diagram.
7. Make sure the cover is firmly seated on the base.

**The AirCycler® g2 turns the furnace fan on and off, but the motorized damper does not cycle.**

**Solution Check:**
1. Confirm that the AirCycler® g2 is providing a 24VAC signal to the motorized damper.
2. Confirm the 24 VAC motorized damper is operational by powering directly with a 24 VAC signal
3. Verify there is continuity in the wiring between the damper and the AirCycler® g2

**The A/C turns on during fan cycling calls**

**Solution Check:**
1. Verify that the wiring conforms to the wiring diagram.
2. Confirm that the G wire is properly connected.
   *Note: The G wire must be interrupted by the AirCycler® g2. Do not run the G wire in parallel.*

**The EXH icon is flashing.**
This indicates the g2 controller has seen the FanConnect™ exhaust fan on for more than 4 hours.

**Solution Check:**
1. Turn off exhaust fan.
2. Check wiring from FanConnect™ switch to g2 controller.

For more troubleshooting and frequently asked questions, visit: www.aircycler.com/pages/troubleshooting

For Limited Warranty information please visit: www.aircycler.com/products


Technical Support:
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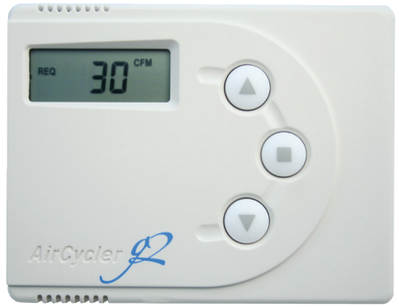
AirCycler®
Ventilation Products




# AirCycler® g2
## INSTALLATION & USER'S MANUAL

**VENTILATION MADE BREEZY!™**
**A BREEZE TO INSTALL • A BREEZE TO USE!**


This product may be protected by one or more of the following patents and patents pending: 8185244, 7258280, 6431268, 881806, 547017, Canada 2245135


**INTRODUCTION**
If the AirCycler® g2 was installed in your home as a ventilation controller, DO NOT DISABLE IT.

In the past, homes depended on natural leaks for ventilation. Today, energy efficient homes are built to reduce natural ventilation and leaks. Inadequate ventilation can increase indoor air pollutants to harmful levels. Indoor air quality is typically 5 to 10 times more polluted than outside air. Controlled ventilation provides adequate air flow to the home without compromising its efficiency.

**SAFETY CONSIDERATIONS**
Read and follow manufacturer's instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may result in personal injury or product and property damage.

**INSTALLATION CONSIDERATIONS**
The AirCycler® g2 requires 24VAC (R and C terminals) to be connected for proper operation. The controller will not operate without these two connections.

Vnc - Normal Closed Vent
R - 24VAC Power
W - Heating
Gt - Fan From Thermostat
Gf - Fan to Furnace
C - Common
V - Vent
Ex - Exhaust Fan

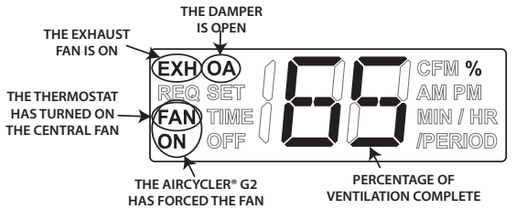
The wires (R, C, & W) from the air handler to the thermostat can run parallel with the wiring from the AirCycler® g2 to the air handler. The fan wire (G) must be interrupted by the AirCycler® g2. Some thermostats do not require a common (C) connection. The AirCycler® g2 requires this for power, which must be wired to the furnace.

**DAMPER LOCATION**
The fresh air damper can be located anywhere in the inlet duct. Minimize the length of the inlet duct to improve air flow and improve system efficiency. It is recommended that the damper be as close to the return air plenum and the AirCycler® g2 controller as possible, and the inlet duct connect to the return plenum upstream of the system filter, and down- stream of any duct mounted sensors.

**DAMPER INSTALLATION**
The damper may be installed in any position. It is recommended to install it with the motor at the12 o'clock position if mounted horizontally. Air may flow through in either direction, although it is recommended to install with the crimped end as the outlet. Use care to avoid distorting the damper housing and provide adequate support.

**CHOOSE A FRESH AIR LOCATION**
ASHRAE recommends that the fresh air intake be located at least 10 ft. from any source of pollutants, such as auto exhaust, dryer exhaust, exhaust from any fuel-burning appliances, etc. Avoid installation near odor sources such as garbage bins or barbecue grills. A minimum of 3 ft. above ground is recommended to avoiding ingress of leaf litter, grass clippings, etc. Do not use a crawl space, basement, or attic as a source of intake air. Always be sure to comply with local building codes and requirements regarding fresh air inlets.

**NORMAL OPERATION DISPLAY**




- When the AirCycler® g2 is in Normal Operation, the display will show the percentage of ventilation complete for the current hour.
- If the central fan is on, the FAN and ON icon will be illuminated.
- If the exhaust (bath) fan is on, the EXH icon will be illuminated.
- If the outside fresh air damper is open, the OA icon will be illuminated.
- If the exhaust fan is running its delay time after bathroom occupancy, the delay time countdown, MIN and EXH icons will be illuminated.
- If the thermostat is calling for heat or cool, the FAN icon will be illuminated without the ON icon.
- The ON icon is only illuminated when the AirCycler® g2 has forced the central fan on. *(Calculated Time Mode Only)*
- Press the MODE key at any time during normal operation to set the current time of the day.
- If the EXH icon is blinking, it indicates the exhaust fan has been on for more than 4 hours or the connection to the AirCycler® g2 controller was lost.

## 1.0 INSTALLATION INSTRUCTIONS

### 1.1 CONTROLLER LOCATION
The AirCycler® g2 controller can be installed near the thermostat or out of view on/near the air handler unit.

*Warning: Before installing the AirCycler®, turn off all power to the furnace. There may be more than one power to disconnect. Electrical shock can cause injury or death.*

### 1.2 INSTALLATION
On power up, all icons will be illuminated for 3 seconds.

There are two setup methods: **Calculated Time** and **Calculated Flow**. Calculated Flow is used primarily with the optional FanConnect™ bath fan/light switch.

To set up the AirCycler® g2 based on Calculated Flow, press the **UP** arrow within 3 seconds of power up. To setup based on Calculated Time, press the **DOWN** arrow within 3 seconds of power up and skip to section 2.2.

*Pressing MODE always advances to the next setting.*

## 2.1 CALCULATED FLOW SET UP

### 2.1.1 SETTING MEASURED SUPPLY AIR FLOW
The measured flow is the amount of air that enters the return side of the air handler from the outside air vent. Enter the measured flow. To accommodate variable speed air handlers, you can enter different values for heat, cool and fan. Factory default is 90 CFM.

*Flow measured during heat call*

*Flow measured during cooling call*

*Flow measured during fan only call*

### 2.1.2 SETTING MEASURED EXHAUST AIR FLOW
Enter the measured flow from the exhaust fan. Factory default is 60 CFM.
*Only if FanConnect™ is connected

### 2.1.3 SETTING CODE REQUIRED CONSTANT AIR FLOW
Set the required continuous air flow in CFM based on relevant codes. For ASHRAE 62.2 see Appendix A. Factory default is 30 CFM. The AirCycler® g2 will calculate run times based on settings 2.1.1 and 2.1.2.

### 2.1.5 CALCULATED FLOW SETUP IS COMPLETE

Continue to section 2.2.3 Setting the optional mixing time.

## 2.2 CALCULATED TIME SETUP

### 2.2.1 SET MINUTES/HOUR OF SUPPLY AIR REQUIRED
Enter the minutes per hour that you require fresh air to be brought into the home. Factory default is 20 minutes.

For installations without the FanConnect™ switch, go to section 2.2.3.

### 2.2.2. SET MINUTES OF EXHAUST FAN REQUIRED
Enter the desired minutes per hour you want the exhaust fan to run. Factory default is 20 minutes per hour.

If the FanConnect switch is not detected, make sure it is in the OFF position.

### SLAVE MODE
Press the DOWN arrow until the countdown reaches 0. Press again to get to SL. (SL= slave mode) In slave mode the exhaust fan runs anytime the central fan is running with the fresh air damper open. Slave mode will provide a "balanced" mode of operation.

### 2.2.3. SETTING THE OPTIONAL MIXING TIME
If the user needs more central fan time for whole house mixing than the amount that is provided by ventilation time, the central fan can be configured to run an additional time period to complete the mixing period. Factory default is 0 or OFF.

The fresh air damper will not be open during this extra time.

### 2.2.4 SETTING OPERATION HOURS
If the user does not want the ventilation system to run constantly, you can set ON time and OFF time. Factory default is OFF.
If you are not setting an ON and OFF time, continue to section 2.2.6.

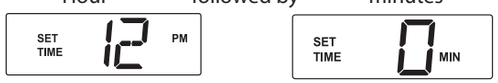
If you enter YES, the AirCycler® g2 will prompt you to enter the hour you would like the ventilation to begin and the hour you want it to end followed by the current time.

Set the hour you want the ventilation to START.

Set the hour you want the ventilation to STOP.

### 2.2.5 SETTING CURRENT TIME
Enter the current time.

Hour followed by minutes




### 2.2.6 CALCULATED TIME SETUP IS COMPLETE
If optional FanConnect™ switch is installed, continue to 2.2.7.
If not, setup is complete and normal operation will start.

### 2.2.7 EXHAUST FAN DELAY TIME
Set the desired length of time you would like the bath fan to run after the FanConnect™ has been turned off. Factory default is 10 minutes.

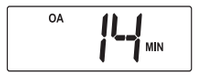
*Press MODE to save all settings and return to normal operation.*

## 3.0 NORMAL OPERATION DISPLAY STATUS & SETTINGS

### 3.1 STATUS
To get detailed status information, press the UP arrow. The status displays are the same for both Calculated Flow and Calculated Time modes.

### 3.1.1 MINUTES LEFT
The first display is the number of minutes left in the period (hour). Pressing the UP arrow again gets you to the next status screen

### 3.1.2 OUTSIDE AIR TIME ELAPSED
This display shows the number of minutes this period that the outside air damper has been open with the central fan running.




### 3.1.3 EXHAUST RUN TIME*
This display shows the elapsed run time of the exhaust fan for this time period.

### 3.1.4 EXHAUST DELAY TIME*
This display shows the exhaust delay time set.

### 3.2 CURRENT SETTINGS
Pressing the DOWN arrow during normal operation, scrolls through the current setting entered by the installer.

| For Calculated Flow mode the screens will show: | For Calculated Time mode the screens will show: |
|---|---|
| Required CFM set | Exhaust run time set* |
| measured outside air CFM | Outside air time in minutes |
| measured exhaust air CFM* | Exhaust fan delay time* |
| exhaust fan delay time* | If operating time is enabled: |
| If operating time is enabled: | Operating Time On |
| Operating Time On | Operating Time Off |
| Operating Time Off | |

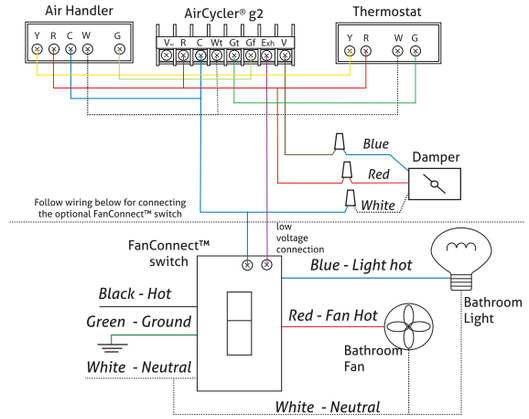
** If optional FanConnect™ switch is installed*

### 3.3.1 SET CURRENT TIME
By pressing the MODE key you will cycle through current time of day and will be able to change it if needed.
See 2.2.5 - Setting Current Time

### 3.4 RECORD ALL SETTINGS ON THE INSTALL STICKER PROVIDED. LIMITED WARRANTY WILL BE VOID IF THE STICKER IS NOT PRESENT.

## 4.0 RESET TO DEFAULT VALUES
On initial power up when all icons are lit, hold the **UP** arrow for 10 seconds to be prompted to reset all settings to default.

## WIRING DIAGRAM
Use the following diagram to wire your AirCycler® g2. The controller will not operate correctly if it is not wired according to the manufacturer's diagram.




APPENDIX A - ASHRAE 62.2 Reference Chart

For more information about ASHRAE requirements, visit www.ashrae.org

SQUARE FOOTAGE

| NO. OF BEDROOMS | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 |
|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 2 | 33 | 38 | 43 | 48 | 53 | 58 | 63 | 68 |
| 3 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
| 4 | 48 | 53 | 58 | 63 | 68 | 73 | 78 | 83 |
| 5 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 |

**CMF Required**
Based on: 7.5cfm x (N+1) + A x 0.01
N= Number of Bedrooms A = Square Footage